

Lung Cancer

Definition: Neoplasm of the lung, trachea or bronchus. This disease is characterized by uncontrolled growth of neoplastic cells developing in the respiratory tract, with the potential to invade and spread to other sites. ICD-9 codes 162.0-162.9.

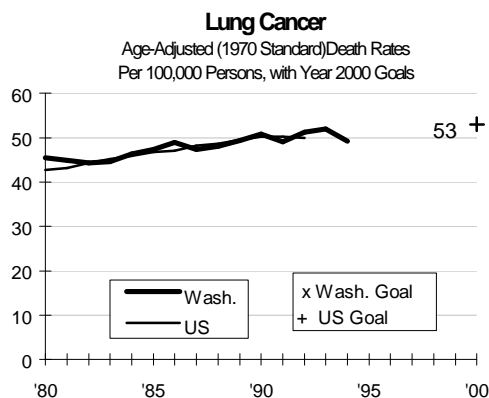
Summary

Lung cancer is the leading cause of cancer deaths among both men and women in Washington State. In 1994, lung cancer caused 2,829 deaths in Washington, an age-adjusted mortality rate of 49.2/100,000 population (See technical note regarding age-adjustment). Cigarette smoking is responsible for at least 85% of lung cancer deaths and is by far the most important risk factor. Effective strategies for lung cancer prevention must reduce tobacco use and exposure.

Time Trends

Both the state and national data show increases in overall lung cancer mortality rates from 1980 through 1992. During this period the Washington rates have been close to the national figures.

An encouraging trend nationally is a decrease in lung cancer mortality in younger men and women, attributable to reductions in cigarette smoking since the 1964 Surgeon General's report on smoking and health. For men over age 55 and women over 45, however, mortality has increased markedly, and rates for women overall increased by about 5% per year between 1973 and 1991. This mortality increase for women is largely responsible for the gradually increasing overall lung cancer death rates.



Year 2000 Goal

The national goal for the year 2000 is to slow the rise in lung cancer deaths to achieve an age-adjusted (1970 standard) mortality rate of 53/100,000. There is no lung cancer goal for Washington.

Geographic Variation

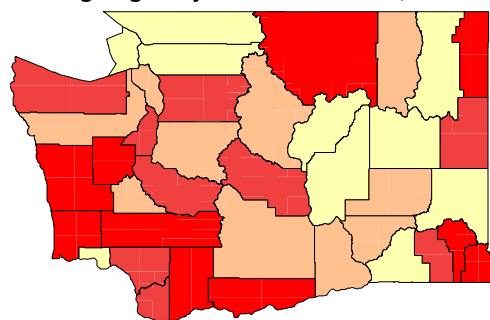
The map below displays age-adjusted mortality due to lung cancer by county for 1992-1994. The counties with the highest rates were Garfield, Pend Oreille, Mason, Grays Harbor, Lewis, Asotin, Okanogan, Pacific, Skamania, and Klickitat. The counties with the lowest rates were Wahkiakum, Lincoln, Douglas, San Juan, Whitman, Whatcom, Walla Walla, Grant, Stevens, and Skagit. It is important to note that for some counties the rates are based on small numbers of deaths and are subject to considerable year-to-year fluctuation.

Age and Gender

Lung cancer is now the leading cause of cancer deaths for both men and women. Like most cancers, lung cancer is a disease of older adults. The highest mortality rates are in people 75 and older.

Mortality is substantially higher for men, as the chart below demonstrates. However, age-adjusted

Lung Cancer
Average Age-Adjusted Death Rates, 1992-1994

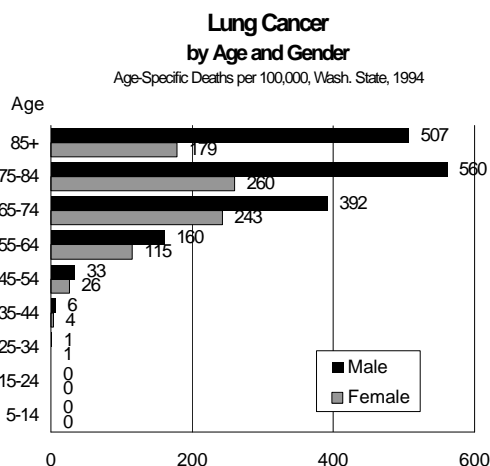


Death Rates

- 23.7 to 44.9
- 45.0 to 50.7
- 50.8 to 58.9
- 59.0 to 70.4

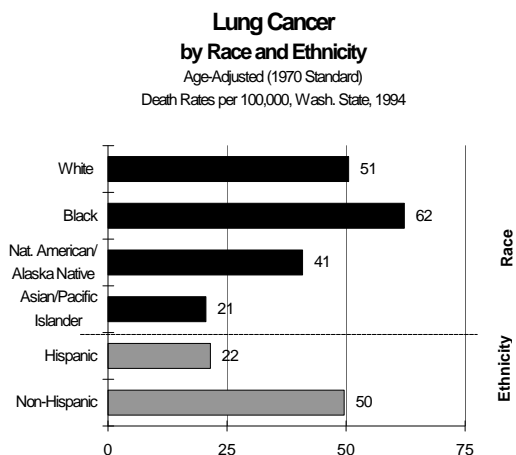
State Average: 50.8
National Rate: 50.0 (1992)

mortality rates for women increased by nearly 45% in Washington from 1980 to 1994, while rates among males remained essentially unchanged.



Race and Ethnicity

African American lung cancer mortality in 1994 exceeded that of other racial and ethnic groups. The same is true for lung cancer incidence. In 1993, the age-adjusted incidence rate for this disease among African Americans in Washington was 78.6/100,000, compared to 57.4 for Caucasians.



Other Measures of Impact and Burden

Incidence. In Washington in 1993, 3173 new cases of lung cancer were diagnosed, accounting for 15.4 percent of all cancers in men and 12.6 percent of all cancers in women. Incidence was much higher for men (72.2/100,000) than for women (43.7/100,000) and higher for African Americans (78.6/100,000) than for any other racial group.

Lung cancer incidence, which reflects the cigarette smoking habits of the population in previous years, is not expected to plateau until after the year 2013.

Hospitalizations. In 1994, 2,048 hospital admissions were recorded among Washington residents for lung cancer related diagnosis or treatment, an admission rate of 38 per 100,000 persons. This represents a decline from the 1990 rate of 49/100,000, due to a trend toward treating cancer patients in outpatient settings. Lung cancer accounted for 13,788 hospital days in 1994, with total related charges of over \$25.5 million.

Survival. Lung cancer has a low five-year survival rate, with only 13% of patients living five years after diagnosis.

Risk and Protective Factors

Cigarette Smoking. Smoking is the number one preventable cause of death and disease in our society. Well over 85% of all lung cancers can be attributed to smoking.¹ Preventing the initiation of smoking behavior would dramatically reduce the lung cancer incidence and death rate. In addition, even long-time smokers who quit smoking will reduce their risk. (See Tobacco Use and Exposure section for detailed information on smoking and tobacco use.)

Exposure to Environmental Tobacco Smoke. Environmental tobacco smoke is a carcinogen responsible for approximately 3,000 lung cancer deaths annually in US non-smokers². Eliminating or reducing the exposure of non-smokers to environmental tobacco smoke is an important component of lung cancer prevention.

Exposure to environmental/occupational hazards. Occupational exposure to lung carcinogens, such as asbestos, radon, and ionizing radiation are regulated through the Washington Industrial Safety and Health Act (WISHA). Nevertheless, exposure still occurs. Smoking often has synergistic effects with occupational exposures, dramatically increasing the lung cancer risk.

Stage at diagnosis. When treatment is initiated early, while the tumor is still localized, five-year survival rates up to 75% are achievable. However, lung cancers are typically detected after symptoms develop when the cancer has spread beyond the lung. Thus survival in the usual case is very poor. Unfortunately, chest x-ray and other available diagnostic modalities lack sufficient accuracy to be used as routine screening tests in asymptomatic

persons. Studies of the effectiveness of screening have shown no benefit in reducing mortality due to lung cancer.³

High Risk Groups

Smokers. The lung cancer risk among smokers is approximately 11 times that of non-smokers.⁴

Persons with less than a high school degree. Nearly 35% of adults in this category in Washington smoke, the highest smoking prevalence of any subgroup examined.

Persons regularly exposed to environmental tobacco smoke. Employees working in environments where smoking is a regular occurrence (for example, restaurants, bars, taverns, manufacturing plants) or individuals who regularly encounter second-hand smoke in the home or car are at a higher risk for lung cancer than non-smokers who are not regularly exposed.

African Americans. African Americans have the highest lung cancer mortality and incidence rates.

Elderly. Lung cancer victims are primarily over the age of 60, with the highest risk age group being 65-84. It is rare for persons under age 50 to be diagnosed with or to die of lung cancer.

Intervention Points, Strategies and Effectiveness

Since screening is impractical, lung cancer control must focus on primary prevention. Tobacco use is the leading preventable cause of death and disease in the United States and is responsible for the vast majority of lung cancer cases. Smoking prevalence reduction strategies should prevent smoking onset in youth and young adults, reduce exposure of non-smokers to environmental tobacco smoke, help current smokers quit, and reduce the social acceptability of tobacco use. The section on Tobacco Use and Exposure reviews specific strategies.

See related sections on Tobacco Use and Exposure and All Cancer.

Data Sources

State death data: Washington State Department of Health, Center for Health Statistics

National death data: National Center for Health Statistics; and National Cancer Institute, SEER Cancer Statistics Review 1973-1991.

State survey data: Washington State Department of Health, Center for Health Statistics, Behavioral Risk Factor Surveillance System (BRFSS)

State incidence data: Washington State Department of Health, Washington State Cancer Registry

State hospitalization data: Washington State Department of Health, Office of Hospital and Patient Data, Comprehensive Hospital Abstract Reporting System (CHARS)

For More Information

Washington State Department of Health, Non-Infectious Disease and Injury Prevention, (360) 586-6082.

Opportunities For Prevention: County Profiles for Five Major Cancers. Washington State Department of Health, Community and Family Health. 1995.

Technical Notes

Age adjustment: Rates presented in this section are age-adjusted to the 1970 U.S. standard population. The Washington State total population lung cancer rate for 1994, age-adjusted to the 1940 U.S. population, was 37.8/100,000. See technical appendix.

ICD-9 codes: The Healthy People 2000 goal does not include cancer of the trachea, whereas the Washington state calculation does. Cancer of the trachea accounts for less than .1 percent of the lung cancer in Washington.

Race and ethnicity: See technical appendix.

Endnotes:

¹ U.S. Department of Health and Human Services, *Reducing the Health Consequences of Smoking: 25 Years of Progress. A Report of the Surgeon General.* U.S. DHHS, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. DHHS Publication No. (CDC) 89-8411, 1989.

² Environmental Protection Agency, Office of Research and Development, Office of Air and Radiation. *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders.* EPA/600/6-90, 1992.

³ Guide to Clinical Preventive Services, 2nd Edition, "Report of the U.S. Preventive Services Task Force", 1996.

⁴ Rothenberg R, Nasca P, Mikl J, Burnett W, et al. "Cancer." In Amler RW, Dull HB (eds), *Closing the Gap: The Burden of Unnecessary Illness*, Oxford University Press, New York. 1987.